

### **Amendments To The Claims**

The listing of claims will replace all prior versions, and listings, of claims in the application.

#### **Listing of claims**

1. (Currently amended) A method for end-to-end environmental data acquisition and delivery comprising the steps of:

- a) acquiring a first set of environmental subsurface data in a first location via moveable direct reading sensors, wherein said environmental subsurface comprises an area beneath at least one of a surface of earth, and/or a surface of a body of water, and wherein said moveable direct reading sensors are placed in said environmental subsurface and said moveable direct reading sensors are in direct contact with at least one of soil, water, and/or vapor;
- b) geo-referencing said data;
- c) transmitting said data to a data analysis application server;
- d) analyzing said data to obtain information about said data; and
- e) using said information to select a next location for acquiring next data from said moveable direct reading sensors.

2. (Original) The method of claim 1, wherein said data of step (a) comprises:  
one or more data parameters.

3. (Previously Presented) The method of claim 1, wherein said environmental subsurface data relates to at least one of chemical and/or geological attributes of the subsurface.

4. (Currently Amended) The method of claim 1, wherein said moveable direct reading sensors of step (a) comprise at least one of:

- direct sensing technologies;
- optical sensors;
- chemical sensors;
- electromechanical sensors;
- membrane interface probe (MIP) sensors;
- advanced MIP sensors;
- laser induced fluorescence (LIF) sensors;
- ultraviolet induced fluorescence (UVF) sensors;
- polymer sensors; and/or
- haloprobe sensors.

5. (Previously Presented) The method of claim 1, wherein said geo-referencing of said step (b) comprises at least one of:

- geo-referencing in at least two dimensions; and/or
- geo-referencing said data to a specific point on the earth's surface.

6. (Previously Presented) The method of claim 5, wherein said at least two dimensions comprise at least one of:

- latitude, longitude, altitude, and/or time.

7. (Currently Amended) The method of claim 1, wherein said geo-referencing of said step (b) comprises:

- geo-referencing in at least three non-temporal dimensions.

8. (Currently Amended) The method of claim 7, wherein said at least three non-temporal dimensions comprise at least one of: latitude, longitude, altitude, depth and/or time elevation.

9. (Previously Presented) The method of claim 1, wherein said transmitting of step (c) comprises at least one of:

- transmitting via a communications link;
- transmitting via the Internet; and/or
- transmitting via a wireless communications link.

10. (Original) The method of claim 1, wherein said application server of step (c) comprises:  
an application service provider (ASP).

11. (Previously Presented) The method of claim 1, wherein said step (d) comprises at least one of:

- storing said data in a database;
- mining said data;
- calculating said information from said data using an algorithm;
- performing visualization processing in at least two dimensions;
- displaying a graphical visualization of said data;
- mapping said data; and/or
- displaying in at least one of: two-dimensional and/or three-dimensional formats said data.

12. (Previously Presented) The method of claim 1, wherein said step (d) comprises at least one of:

- refining raw data into processed data;
- normalizing said data for variations in acquisition of said data;
- normalizing for condition of a membrane of a membrane interface probe (MIP);
- normalizing for variation of actual subsurface conditions including at least one of chemical concentration and/or soil water matrix;
- determining relative quality efficacy data including determining at least one of: pressure, flow rate, condition of detectors, drift, calibration, depth of probe, hydrostatic, and/or baseline noise of analytical/electrical system;
- storing said data;
- aggregating said data into aggregate data;
- determining predictive modeling using said aggregate data;
- assessing measure of risk using said aggregate data;
- evaluating risk using said aggregate data;
- calculating total mass of chemical compounds;
- calculating volume of affected soil and groundwater;
- calculating compound identification,
- calculating removal costs,
- performing sensitivity analysis, and/or
- comparing data of multiple sites.

13. (Previously Presented) The method of claim 12, wherein said step of performing a sensitivity analysis comprises at least one of:

displaying using a “dashboard” type display; and/or  
providing results to at least one of an office device, and/or a field device.

14. (Previously Presented) The method of claim 1, further comprising:

f) posting said information for access by authorized users.

15. (Previously Presented) The method of claim 14, wherein said posting comprises at least one of:

posting on a website; and/or  
posting on a secure Internet Web site.

16. (Previously Presented) The method of claim 1, further comprising:

f) transmitting said information over a network to a device.

17. (Previously Presented) The method of claim 16, wherein said network comprises at least one of:

a wired network; and/or  
a wireless network.

18. (Previously Presented) The method of claim 1, further comprising at least one of:
- f) aggregating said data into a database;
  - g) mining said database;
  - h) determining predictive modeling using said aggregate data;
  - i) assessing measure of risk using said aggregate data;
  - j) evaluating risk using said aggregate data;
  - k) providing the user with relative analysis of various sites based on at least one of: geological information, and/or contaminant conditions; and
  - l) storing said data in a database;
  - m) grooming data;
  - n) comparing data to at least one of: historical data, and/or data from other sites;
  - o) performing datamining; and/or
  - p) ranking sites.
19. (Previously Presented) The method of claim 1, further comprising:
- f) transmitting said information comprising:
    - i. transmitting said information including completed data analytics via the Internet back to source location for decision-making and process changes; and
    - ii. transmitting said information wirelessly to a mobile device to facilitate access via Internet protocols to said information analyzed from said sensor outputs.

20. (Previously Presented) The method of claim 1, further comprising at least one of:

- f) normalizing said data for variations in at least one of: acquisition of said data, condition of membrane of a membrane interface probe (MIP), subsurface conditions including at least one of chemical concentration and/or soil water matrix; and/or
- g) determining relative quality efficacy data including determining at least one of: pressure, flow rate, condition of detectors, drift, calibration, depth of probe, hydrostatic, and/or baseline noise of analytical/electrical system.

21. (Currently amended) A method for end-to-end environmental data acquisition and delivery comprising the steps of:

- a) acquiring environmental subsurface data at a location via moveable direct reading sensors, wherein said environmental subsurface comprises an area beneath at least one of a surface of earth, and/or a surface of a body of water;
- b) geo-referencing said data in at least three non-temporal dimensions, wherein said geo-referencing comprises associating said environmental subsurface data with said location; and
- c) transmitting said data to a data analysis application server adapted to analyze said data to obtain information about said data.

22. (Previously Presented) The method of claim 21, further comprising:

receiving said information from said data analysis application server.

23. (Currently amended) A method for environmental subsurface data acquisition and analysis comprising:

receiving environmental subsurface data acquired at a location via moveable direct reading sensors, wherein said environmental subsurface comprises an area beneath at least one of a surface of earth, and/or a surface of a body of water, and wherein said moveable direct reading sensors are placed in said environmental subsurface and said moveable direct reading sensors are in direct contact with at least one of soil, water, and/or vapor;

receiving said location;

geo-referencing said data by said location in at least three non-temporal dimensions;

and

analyzing said data to obtain information.

24. (New) The method of claim 1, wherein said geo-referencing of said step (b) comprises geo-referencing in time.

25. (New) The method of claim 21, wherein said geo-referencing further comprises geo-referencing in time.

26. (New) The method of claim 23, wherein said geo-referencing further comprises geo-referencing in time.